

7.10 Other Erosion Control Structures

7.10.1 Bench Terraces and the Haitian Peasant

From the point of erosion control efficiency, the bench terrace is superior to all other erosion control structures. It entails a permanent change in the topography of a hillside. Standard bench terraces, which may be used on slopes up to 35% of gradient, frequently have a slight reverse incline and a ditch at the rear of the terrace to carry run-off water out to a protected outlet. In the course of this research, bench terraces were observed in Furcy, Fort-Jacques, Madlen (near Fermath), the Acul Watershed (near Aux Cayes). The bench terraces were all in a state of good repair. With the exception of the terraces in Furcy, which had been built by an urban landowner who tried his hand at flower growing (and did not succeed), the bench terraces were all built in the context of one or another soil conservation project.

The only area where bench terraces had been incorporated into the agricultural practices of the peasants was the Fort-Jacques/Fermathe area. In Furcy the peasants did not try to imitate the terraces of the urban landowner. And in the Laborde area even those terraces which had been built by the project were being used by the peasant for extraneous ends. On one of them a peasant constructed his house. On others only livestock were being grazed. In general the bench terraces I have seen did not appear to excite the interest of the local peasants.

The main drawback is the tremendous amount of time and labor that must be expended in the construction of a bench terrace. The dry wall, for example, entails the digging of a simple foundation and the laying of rocks. But the bench terrace in addition entails the laborious removal of topsoil, the levelling of the slope into step-like surfaces, the construction of risers, and the replacement of the topsoil.

The failure of bench terraces (outside of the Fort-Jacques area) to excite peasant interest stems from the fact that they have not been built in association with any profit-producing change in local agriculture. In the Laborde area, for example, the terraces were built on agriculturally marginal land, that is the land which the peasants were willing to lend the blan for their bizarre experiments. To this day the terraces are still not used for agriculture. The terraces were built as a demonstration. But what has been demonstrated is that the demonstration of a technical trick will not activate peasant behavior, unless it is accompanied by a clear demonstration that the investment will result in substantial otherwise unavailable profits.

But even despite its failure to catch on, the bench terrace continues to excite several soil conservationists who have worked in Haiti. Others--generally in a position of higher authority--have stepped in to curtail their construction in at least one project, claiming

that they were too expensive. This assessment is unfortunately correct from the point of view, not of their erosion control function, but of their ability to reward investors with increased returns. Until a soil conservationist arrives who can integrate the bench terrace into a broader web of innovations that produce profits for the peasant, the bench terrace will remain the device of project technicians and of city and town dwelling landowners who have the capital to obtain returns from these structures. Despite its unparalleled capacity to arrest erosion, I cannot recommend its use in projects in Haiti simply because it stands little chance of becoming incorporated into the economic repertoire of the peasant.

7.10.2 Dry Walls and the Haitian Peasant

The dry wall (mi sek) and the rock barrier (kodon pye) are probably the two most common erosion control structures found throughout Haiti. The dividing line between the two is hard to draw, and terminological practices are not consistent from one part of the country to the other. The peasants use the term mi sek to refer as well to the bench terrace, since the Creole term teras means, not terrace, but road.

But despite terminological ambiguity, one sees throughout rural Haiti mountainsides with long rows of (generally crumbling) rocks. Some of these structures are fairly high (up to four feet) and are more carefully constructed. These are the dry walls. Others are lower and less elaborately constructed. These are **what are** .

generally referred to as kodon pye.

Their erosion control efficiency, even when well built, is felt by most soil conservationists to be relatively low. Theoretically, with time and some luck, the dry wall can eventually transform itself into type of bench terrace. As soil piles up behind the wall, the landowner will pile on more rocks. More earth will then pile up. And more rocks will be added. The end result would be a level layer of topsoil supported by the wall--i.e. a bench terrace and its riser.

Unfortunately this sequence of events does not generally occur in Rural Haiti. With the exception of the Fort-Jacques area, any walls which I had observed had had as their main function the securing of Food for Work for those who constructed them. The charade is particularly dramatic in the Northwest. As part of its emergency food distribution program, HACHO has paid peasants to construct kilometer after kilometer of rock wall on barren land that could not possibly be used for agriculture. The absence of agriculture and the absence of rainfall drastically reduce the danger of erosion. When such hillsides are lined with rock walls, it does not take a detective to infer the presence of project busy work. When the rock walls begin to crumble, few landowners take the trouble to repair them. *

A skeptic would erect a monument to the rock wall as a symbol of the labor mobilizing power of Food for Work in projects which may be completely useless to all concerned.

7.10.3 The Spacing of Erosion Control Structures

It may be that one day the rock wall ^{will} form part of a complex from which the peasant will draw profits. To some degree the rock walls of Fort-Jacques may have served this function. In such cases measures should be taken, not only to ensure their repair, but to construct them in such a way that repairs will be less frequent.

Paradoxically the skill with which the rocks are placed, or the dedication with which the builders stay on the contour of the slope, may be of less importance than the size of the wall and the vertical spacing of the wall from its nearest neighbor. The importance of size and spacing stems from the fact that the major enemy of the rural Haitian walls is probably the cow. If the walls are low, cows will attempt to climb over them. And if the walls are closely spaced, landowners will tie cows in such a way that they will be able to reach the walls. Walls that are high, in contrast, will frighten away most cows. And walls that are spaced from 12 to 15 meters from each other leave ample room to tie animals in such a fashion that they are out of reach of the walls. In short, one cannot be

optimistic about the rock wall, but if they are constructed, they should be constructed in such a way as to discourage destruction from the picketed cow.

7.10.4 Treatment of Ravines

In the Aux Cayes area, the use of well built check-dams has transformed the face of large numbers of (privately owned) ravines. Whereas formerly water used to rush down these once naked gullies, transporting soil downhill, the check dams have succeeded in capturing the soil. The ravines have been transformed from naked ditches into the most lush, verdant features of the landscape. Trees of all sorts are now planted there. The presence of the newly formed layers of thick soil, and the fast growing crops which this soil now supports (where there was formerly nothing) have induced most owners to take very good care of their check-dams. They have yielded payoffs in a way the the rock walls have not.

To briefly summarize the preceding section: many of the technical recommendations that have been made here stem from factors extraneous to the question of erosion control per se. The success or failure of many devices will be affected less by their technical ability to control erosion than by their ability to integrate themselves into the agricultural and livestock economy of the peasant.